

AMENDMENTS TO THE CLAIMS

Claims 1-36 (canceled)

Claim 37 (original) A method for producing a spin-valve structure, comprising electrodepositing said spin-valve structure on a substrate.

Claim 38 (original) The method as recited in claim 37, wherein said spin-valve structure has a first free ferromagnetic layer and wherein said substrate forms a barrier with said first free ferromagnetic layer.

Claim 39 (original) The method as recited in claim 37, wherein said substrate is a semiconductor substrate.

Claim 40 (original) The method as recited in claim 37, wherein electrodepositing said spin-valve structure on a substrate comprises the following steps:

electrodepositing a first ferromagnetic layer on a semiconductor substrate;

electrodepositing a spacer layer on the first ferromagnetic layer; and

electrodepositing a second ferromagnetic layer on the spacer layer.

Claim 41 (original) The method as recited in claim 37, wherein electrodepositing said spin-valve structure on a substrate comprises the following steps:

electrodepositing a first ferromagnetic layer on a semiconductor substrate;

electrodepositing a first nonmagnetic layer on the first ferromagnetic layer;

electrodepositing a third layer on the first nonmagnetic layer, wherein the third layer is selected from the group comprising an antiferromagnetic layer, a metal layer, a semimetal layer and a conductive semiconductor layer;

electrodepositing a second nonmagnetic layer on the third layer; and

electrodepositing a second ferromagnetic layer on the second nonmagnetic layer.

Claim 42 (original) The method as recited in claim 41, wherein said spin-valve structure forms a first free ferromagnetic layer and wherein said substrate forms a barrier with said first free ferromagnetic layer.

Claim 43 (original) The method as recited in claim 41, wherein said steps are performed in a single electrolyte bath.

Claim 44 (original) The method as recited in claim 41, wherein said electrolyte bath comprises several elements, said elements being selected for deposition by a predetermined applied electrodeposition voltage.

Claim 45 (original) The method as recited in claim 44, wherein said semiconductor substrate defines a substrate surface structure, and wherein said method further comprises changing said substrate surface structure before electrodepositing said spin-valve structure.

Claim 46 (original) The method as recited in claim 44, further comprising selecting a substrate surface structure for said semiconductor substrate before electrodepositing said spin-valve structure.

Claim 47 (canceled)

Claim 48 (currently amended) A method comprising:

~~producing a spin-valve structure by a method as recited in claim 37~~electrodepositing a spin-valve structure on a substrate; and

using the spin-valve structure as a sensing-element for contactless position, distance and movement sensing.

Claim 49 (canceled)

Claim 50 (currently amended) A method comprising:

~~producing a spin-valve structure by a method as recited in claim 37~~electrodepositing a spin-valve structure on a substrate; and

using the spin-valve structure as a sensing-element for angular position sensing.

Claim 51 (canceled)

Claim 52 (currently amended) A method comprising:

~~producing a spin-valve structure by a method as recited in claim 37~~electrodepositing a spin-valve structure on a substrate; and

using the spin-valve structure to indirectly measure physical parameters through a change in resistance of the multilayer structure.

Claims 53-54 (canceled)

Claim 55 (currently amended) A method comprising:

~~producing a spin-valve structure by a method as recited in claim 37~~electrodepositing a spin-valve structure on a substrate; and

using the spin-valve structure as a magnetic device in a magnetic memory circuit for building a Magnetic Random Access Memory.

Claim 56 (original) A method as claimed in claim 55, wherein said magnetic device has a multivalued memory.

Claim 57 (canceled)

Claim 58 (currently amended) A method comprising:

~~producing a spin-valve structure by a method as recited in claim 37~~electrodepositing a spin-valve structure on a substrate; and

using the spin-valve structure as an element of a logic gate in a logic device.

Claim 59 (canceled)

Claim 60 (currently amended) A method of producing and operating the a spin-valve
structure as recited in claim 1, comprising:
electrodepositing the spin-valve structure on a substrate; and
an applied applying a voltage over said an insulating barrier layer of the spin-valve
structure allowing currents to cross said insulating barrier layer.